

Application No.: 09/369410

Case No.: 54982US002

Amendments and Listing of Claims:

Please consider the following claim set which is intended to replace all previously submitted claim sets. Kindly amend the application accordingly.

1. – 20. (cancelled)

21. (new) A system comprising:

- (A) A chemical indicator comprising a substantially flat surface capable of reflecting energy therefrom, and a sterilizing agent sensitive ink associated with the surface, the ink providing a first indicating state prior to being exposed to the sterilization process, and a second indicating state after being exposed to at least a portion of the sterilization process, the first and the second indicating states being distinguished one from the other by color of the surface; and
- (B) An apparatus for reading the chemical indicator, the apparatus comprising:
 - (i) an illumination source configured and positioned to provide energy and to direct the energy toward the substantially flat surface of the chemical indicator;
 - (ii) a detector configured to collect energy reflected from the substantially flat surface and to provide a signal characteristic of the wavelength of the energy reflected from the substantially flat surface;
 - (iii) positioning means for positioning the substantially flat surface of the chemical indicator relative to the illumination source and the detector;
 - (iv) a controller controllably connected to the detector and the illumination source; and
 - (v) processing means for processing the signal from the detector to distinguish the first and second states and for determining whether the chemical indicator is in the first state or the second state.

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22. (new) An apparatus according to claim 21 wherein the illumination source is capable of providing light at an angle of incidence with the surface of more than approximately ten degrees and less than ninety degrees.
23. (new) An apparatus according to claim 22 wherein the detector collects light from the surface at a substantially normal angle.
24. (new) An apparatus according to claim 21 wherein the illumination source is capable of scanning through a variety of wavelengths of light.
25. (new) An apparatus according to claim 21 wherein the illumination source comprises a plurality of light sources capable of providing different wavelengths of light and an optical mixer.
26. (new) An apparatus according to claim 21 wherein the detector is sensitive in a substantially repeatable fashion to a variety of light sources.
27. (new) An apparatus according to claim 21 wherein the processing means includes nonvolatile memory that includes reference data.
28. (new) An apparatus according to claim 27 wherein the reference data includes data generated from sterilization indicators that have been exposed to varying degrees of a sterilization process.
29. (new) An apparatus according to claim 27 wherein the processing means includes means for comparing information generated from said chemical indicator with reference data.
30. (new) An apparatus according to claim 27 wherein the processing means includes means for calibrating components of the apparatus.
31. (new) An apparatus according to claim 21 further comprising means for reading at least a portion of a bar code printed from a permanent, substantially colorfast ink.

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32. (new) An apparatus according to claim 21 further including output means for communicating the results of the chemical indicator to a user or another computer.

33. (new) An apparatus according to claim 21 wherein the chemical indicator comprises a code comprising a portion including a permanent, substantially colorfast ink and a portion comprising a sterilization process sensitive ink, the code having a spatial size and position; and the apparatus comprises a linear charge coupled device (CCD) capable of detecting the spatial size and position of said code.

34. (new) An apparatus according to claim 21 wherein the positioning means includes a means for holding the chemical indicator in a fixed, predetermined orientation relative to said illumination source and said detector.

35. (new) An apparatus according to claim 21 wherein the processing means comprises a complementary metal oxide semiconductor (CMOS) circuit.

36. (new) An apparatus according to claim 21 wherein the processing means comprises a programmable microprocessor.

37. (new) An apparatus according to claim 21 wherein the processing means includes memory means for storing sterilization information.

38. (new) An apparatus according to claim 21 wherein the processing means includes control means.